



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,615	09/29/2003	Ravi Ramanathan	61537B	2556

109 7590 12/05/2005

THE DOW CHEMICAL COMPANY  
INTELLECTUAL PROPERTY SECTION  
P. O. BOX 1967  
MIDLAND, MI 48641-1967

EXAMINER

BRUENJES, CHRISTOPHER P

ART UNIT	PAPER NUMBER
----------	--------------

1772

DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/673,615

Applicant(s)

RAMANATHAN ET AL.

Examiner

Christopher P. Bruenjes

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15, 21, 23-30 and 39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 21, 23-30 and 39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20051017</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Drawings***

1. The drawings were received on October 21, 2005. These drawings are acceptable.

**WITHDRAWN REJECTIONS**

2. The objection to the drawings of record in the Office Action mailed July 7, 2005, Pages 2-3 Paragraph 3, have been withdrawn due to Applicant's replacement drawings received on October 21, 2005.
3. The 35 U.S.C. 103 rejections of claims 21 and 23-26 over Wood of record in the Office Action mailed July 7, 2005, Pages 9-11 Paragraph 6, have been withdrawn due to Applicant's amendments in the Paper received October 21, 2005.
4. The 35 U.S.C. 103 rejections of claims 21 and 23-26 over Straetz of record in the Office Action mailed July 7, 2005, Pages 11-12 Paragraph 7, have been withdrawn due to Applicant's amendments in the Paper received October 21, 2005.

Art Unit: 1772

5. The 35 U.S.C. 103 rejections of claims 27-28 over Wood or Straetz in view of Yang of record in the Office Action mailed July 7, 2005, Pages 12-13 Paragraph 8, have been withdrawn due to Applicant's amendments in the Paper received October 21, 2005.

6. The 35 U.S.C. 103 rejection of claim 30 over Wood or Straetz in view of Chan of record in the Office Action mailed July 7, 2005, Pages 14-15 Paragraph 9, have been withdrawn due to Applicant's amendments in the Paper received October 21, 2005.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. The 35 U.S.C. 103 rejections of claims 1-15, 29, and 39 over Wood in view of Zharov are repeated for the reasons set forth in the previous Office Action mailed July 7, 2005, Pages 3-6 Paragraph 4. However, in light of the amendments to those claims as well as claims 21 and 23-26, the rejections will be rewritten below.

Claims 1-15, 21, 23-26, 29, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood (USPN 5,928,745) in view of Zharov (USPN 5,539,070).

Wood et al teach a fuel tank comprising a core layer of a fuel barrier polymer including fluoropolymers, polyamides polyesters or polyether ketones, etc. (col.5, 11.13-39 and col.6, 11.44-52) and a thermoplastic extrusion of HDPE on the inner and outer layer surrounding the barrier core layer (col.4, 11.59-64). The fuel tank comprises two or more sections bonded together with an adhesive that bonds to the thermoplastic resins used to form the fuel tank (col.7, 11.57-61). As defined by the instant specification high density polyethylene is a low surface energy material. Therefore, because Wood et al teach adhesive bonding of the fuel tanks made of high density polyethylene, Wood et al inherently teach that the adhesive bonds low energy surface materials. Little patentable weight is given to the shape of the sections before being used to form the fuel tank; the same structure of the fuel tank is achievable regardless of what the shape of the individual sections was before bonding together to form the tank. Similarly, no patentable weight is given to the process of forming the individual sections. The sections are formed by blown thermoplastic extrusion, solvent casting, thermoforming, blow molding, or injection molding.

Art Unit: 1772

Little patentable weight is given to the process of forming the fuel tank and Wood et al teach that the tank is made as a single unit (col.7, ll.57-58). Wood et al teach a filler tube and fuel line, which are components having a first open end and a second open end, the first open end extending outwardly through an opening in the tank wall, and the second open end extending inwardly into the tank until it is in contact with the periphery of the tank wall opening and obviously bonded thereto by an adhesive because it must be bonded to the tank wall opening in order to function as a filler tube or fuel line for the fuel tank and adhesive bonding is taught by Wood et al as a method of bonding parts of the fuel tank together.

Wood et al fail to teach that the adhesive has a lap shear strength of about 400 psi or greater and which does not require surface pretreatment of the low surface energy materials or that the adhesive comprises an amine/organoborane complex. However, Zharov et al teach several organoborane/amine complexes used for acrylic adhesives that are embraced by the instant claims when both  $R^1$  and  $R^2$  are alkyl and 'b' equals 0 and 'a' equals 1, especially compounds 6, 9, etc. (col.12, table 1). The adhesive composition with organoborane amine complex initiator are used for bonding low surface energy substrates such as polyethylene that otherwise requires costly surface preparation techniques

Art Unit: 1772

(col.4, 11.1-6). An adhesive with the same composition and make up will have the same characteristics including having a lap shear strength of about 400 psi or greater, supporting a load of 1334 Newtons and having a fuel vapor permeation rate of not more than 46g-mm/m<sup>2</sup>/day. One of ordinary skill in the art would have recognized that amine-organoborane complex containing adhesives are substituted for other adhesives when the adhesive is used to bond low surface energy substrates such as polyethylene, because unlike other known adhesives the adhesive containing amine-organoborane complex can be bonded effectively to low surface energy materials without the need for costly substrate surface preparation techniques, as taught by Zharov et al, especially in column 1, lines 18-60 and column 4, lines 1-6.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to use an adhesive comprising an amine/organoborane complex, which will have the same properties as the claimed adhesive since the adhesive is the same composition, taught by Zharov et al as the adhesive joining sections of a fuel tank together to form the tank of Wood et al because the adhesive comprising an amine/organoborane complex is useful for bonding low surface energy substrates without costly surface preparation including polyethylene, which is commonly used to form fuel tanks, as

Art Unit: 1772

taught by Zharov et al. An adhesive that bonds low surface energy substrates without costly surface preparation techniques will cut production costs.

Especially with regards to claims 21 and 23-26, it would have been obvious to use the adhesive of Zharov to bond components to the fuel tank of Wood et al since Wood et al teach each a fuel tank assembly comprising a fuel tank and fuel tank components including fuel pump, fuel line, an instrument opening, a filler tube and mounting flanges made up of any composition including polymers or steel, which are the known materials used in the art of fuel tank components (col.3, 11.59-61), but fails to explicitly teach a means for attaching the components to the tank. However, Wood et al teach joining tank sections to form a tank by hot melt adhesives or thermosetting adhesives (col.3, 11.51-54). One of ordinary skill in the art would have recognized that adhesives are also used to join fuel components to the fuel tank if adhesives are used to join sections of the fuel tank to form the tank. Also it would have been obvious to one of ordinary skill in the art to add a second seal of adhesive to a primary seal when joining components to the fuel tank in order to increase sealability.

Therefore, it would have been obvious to one of ordinary skill in the art at the time that applicant's invention was made



Art Unit: 1772

to join fuel tank components by means of the adhesive of Zharov to the fuel tank made from adhesively joined sections and to add a second seal to the primary seal in order to increase sealability. Additionally, note that the method of making an article receives little patentable weight in article claims, and therefore how the components are joined to the fuel tank receives little patentable weight. Joining the components by a different method other than adhesive serves the same function and therefore any method of permanent sealing of the component to the fuel tank such as welding performs the equivalent function of permanently sealing the two articles together and determining which method to use is within the level of ordinary skill in the art, absent the showing of unexpected result.

8. The 35 U.S.C. 103 rejections of claims 1-15, 29, and 39 over Straetz in view of Zharov are repeated for the reasons set forth in the previous Office Action mailed July 7, 2005, Pages 3-6 Paragraph 4. However, in light of the amendments to those claims as well as claims 21 and 23-26, the rejections will be rewritten below.

Claims 1-15, 21, 23-26, 29, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Straetz (USPN 6,545,114) in view of Zharov (USPN 5,539,070).

Art Unit: 1772

Straetz teaches a fuel tank comprising a core layer of a fuel barrier polymer including polyamides (col.2, 11.10-12) and a carrier material of HDPE on the inner and outer layer surrounding the barrier core layer (col.2, 11.8-10). The fuel tank comprises two or more sections bonded together with an adhesive that bonds to the thermoplastic resins used to form the fuel tank, which are low energy surface materials (col.2, 11.40-44). Little patentable weight is given to the shape of the sections before being used to form the fuel tank, the same structure of the fuel tank is achievable regardless of what the shape of the individual sections was before bonded together to form the tank. Similarly, Little patentable weight is given to the process of forming the individual sections. The sections are clam shells (fig.2) formed by co-extrusion blow molding (col.1, 11.63-66). The tank is manufactured with additional fittings attached or installed in the halves (col.3, 11.31-40). Straetz teaches that the components are attached to the tank by adhesion because he teaches that connections when forming the fuel tank are either welded or adhesive bonded. The fuel tank components are obviously made up of thermoplastic or thermosetting polymers or steel including polyethylene because the fuel tank itself is composed of polyethylene and the claimed

Art Unit: 1772

materials are all well known in the art of fuel tanks and fuel tank components.

Straetz fails to teach that the adhesive has a lap shear strength of about 400 psi or greater and which does not require surface pretreatment of the low surface energy materials or that the adhesive comprises an amine/organoborane complex. However, Zharov et al teach several organoborane/amine complexes used for acrylic adhesives that are embraced by the instant claims when both  $R^1$  and  $R^2$  are alkyl and 'b' equals 0 and 'a' equals 1, especially compounds 6, 9, etc. (col.12, table 1). The adhesive composition with organoborane amine complex initiator are used for bonding low surface energy substrates such as polyethylene that otherwise requires costly surface preparation techniques (col.4, 11.1-6). An adhesive with the same composition and make up will have the same characteristics including having a lap shear strength of about 400 psi or greater, supporting a load of 1334 Newtons and having a fuel vapor permeation rate of not more than 46g-mm/m<sup>2</sup>/day. One of ordinary skill in the art would have recognized that amine-organoborane complex containing adhesives are substituted for other adhesives when the adhesive is used to bond low surface energy substrates such as polyethylene, because unlike other known adhesives the adhesive containing amine-organoborane complex can be bonded effectively to low surface

Art Unit: 1772

energy materials without the need for costly substrate surface preparation techniques, as taught by Zharov et al, especially in column 1, lines 18-60 and column 4, lines 1-6.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to use an adhesive comprising an amine/organoborane complex, which will have the same properties as the claimed adhesive since the adhesive is the same composition, taught by Zharov et al as the adhesive joining sections of a fuel tank together to form the tank of Straetz because the adhesive comprising an amine/organoborane complex is useful for bonding low surface energy substrates without costly surface preparation including polyethylene, which is commonly used to form fuel tanks, as taught by Zharov et al. An adhesive that bonds low surface energy substrates without costly surface preparation techniques will cut production costs.

Especially with regard to claims 21 and 23-26, it would be obvious to use the adhesive of Zharov to bond the fuel tank components of Straetz to the fuel tank of Straetz. Straetz teaches a fuel tank assembly comprising a fuel tank and fuel tank components including fuel pump, fuel line, an instrument opening, a filler tube and mounting flanges made up of any composition including polymers or steel, which are the known

Art Unit: 1772

materials used in the art of fuel tank components (col.3, 11.59-61), but fails to explicitly teach a means for attaching the components to the tank. However, Straetz teaches joining tank sections to form a tank by means of adhesive bonding (col.2, 11.40-44). One of ordinary skill in the art would have recognized that adhesives are also used to join fuel components to the fuel tank if adhesives are used to join sections of the fuel tank to form the tank. Also it would have been obvious to one of ordinary skill in the art to add a second seal of adhesive to a primary seal when joining components to the fuel tank in order to increase sealability.

Therefore, it would have been obvious to one of ordinary skill in the art at the time that applicant's invention was made to join fuel tank components by means of the adhesive of Zharov to the fuel tank made from adhesively joined sections and to add a second seal to the primary seal in order to increase sealability. Additionally, note that the method of making an article receives little patentable weight in article claims, and therefore how the components are joined to the fuel tank receives little patentable weight. Joining the components by a different method other than adhesive serves the same function and therefore any method of permanent sealing of the component to the fuel tank such as welding performs the equivalent

Art Unit: 1772

function of permanently sealing the two articles together and determining which method to use is within the level of ordinary skill in the art, absent the showing of unexpected result.

9. Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al (USPN 5,928,745) or Straetz (USPN 6,545,114) in view of Zharov (USPN 5,539,070) as applied to claim 21 above, and further in view of Yang et al (USPN 6,110,544).

Wood et al or Straetz in combination with Zharov teach all that is claimed in claim 21 as shown above, but fail to explicitly teach coating the tank and components with a vapor phase plasma coating. However, Yang et al teach vapor phase plasma coating as a method of applying protective coatings on plastic surfaces including shaped articles. The protective coating is deposited material, which provides protection against abrasion and UV degradation and reflects IR radiation (col.1, 11.6-16). One of ordinary skill in the art would have recognized that fuel tanks require protection from UV, IF, and abrasion because fuel tanks are exposed to UV and IF from the sun and the salt, sand, rocks, and other particles on the roads are kicked up by the tires and potentially damage plastic fuel tanks on automobiles and degradation of a fuel tank would lead

Art Unit: 1772

to leaking of the fuel tank. Therefore, one of ordinary skill in the art would have recognized that a protective coating is useful when forming a fuel tank and that a protective coating is added to fuel tanks in order to protect from abrasion, UV degradation, and IR radiation, as taught by Yang et al.

Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to apply the vapor phase plasma protective coating of Yang et al to the fuel tank of Wood et al or Straetz with Zharov in order to protect the fuel tank from abrasion, UV degradation, and IR radiation, as taught by Yang et al.

10. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al (USPN 5,928,745) or Straetz (USPN 6,454,114) in view of Zharov (USPN 5,539,070) as shown above and further in view of Chan et al (US 2002/0172788 A1).

Wood et al or Straetz in view of Zharov teach a fuel tank assembly comprising a plastic fuel tank having a wall with an outwardly extending cylindrical opening and comprising a multilayer structure having inner and outer layers of untreated low energy surface materials and a fuel barrier layer there between and plastic components attached or joined to the fuel tank wall along the periphery of the fuel tank wall opening by

means of an adhesive, which is capable of bonding to untreated low energy surface materials, having adequate structural strength, fuel resistance, sealing and vapor emission properties (as discussed above). However, Wood et al or Straetz in combination with Zharov do not explicitly teach the plastic component comprising a multilayer structure. However, Chan et al teach components for fuel containers having a single-layered structure or a multi-layered structure that comprises an inner and outer layer of a polyolefin and a barrier layer of a barrier resin including polyamide (p.15, col.1, ll.1-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a multi-layered structure comprising a barrier material for the fuel components attached to the fuel tank by adhesive in Wood et al or Straetz with Zharov, in order to lower vapor emission properties as taught by Chan et al.

***Response to Amendment***

11. The declaration under 37 CFR 1.132 filed October 11, 2005 is insufficient to overcome the rejection of claims 1-15, 21, 23-30, and 39 based upon 35 U.S.C. 103 over Wood or Straetz in view of Zharov as set forth in the last Office action because:



It include(s) statements which amount to an affirmation that the affiant has never seen the claimed subject matter before. This is not relevant to the issue of nonobviousness of the claimed subject matter and provides no objective evidence thereof. See MPEP § 716. Specifically, Wood et al and Straetz each teach that the sections of a fuel tank are bonded by adhesive bonding, this teaching is available to one having ordinary skill in the art regardless of whether it is commercially used in the industry.

***ANSWERS TO APPLICANT'S ARGUMENTS***

12. Applicant's arguments regarding the 35 U.S.C. 103 rejections of claims 1-15, 29, and 39 over Wood in view of Zharov have been fully considered but they are not persuasive.

In response to Applicant's argument that Wood fails to teach bonding the fuel tank parts together by adhesive bonding without treating the low energy surfaces, the Examiner admits this in the previous Office Action and is the reason Wood has been combined with Zharov.

In response to Applicant's argument that there is no motivation to combine the teachings of Wood and Zharov, Zharov specifically teaches that the amine organoborane complex initiated adhesive is substituted for prior commonly used

Art Unit: 1772

adhesives when bonding low energy surfaces such as polyethylene because the adhesive of Zharov does not require the expensive surface treatment of prior art adhesives such as the adhesives taught in Wood. The rejection is based on the teachings of Wood and Zharov as a whole. With this in mind, Wood teaches that sections of a fuel tank formed of polyethylene are bonded together using an adhesive. One of ordinary skill in the art would have looked to adhesives known in the art to bond well with polyethylene to use as the adhesive to bond the sections of the fuel tank together since Wood provides only a broad teaching of the types of adhesives that could be used. Zharov specifically teaches that the adhesive taught is preferably used to bond low energy surfaces such as polyethylene surfaces in order to eliminate the expensive treatment steps that other adhesives require. Because Zharov teaches an adhesive used specifically for bonding low energy surfaces such as polyethylene one of ordinary skill in the art would have looked to Zharov to find an adhesive to use in Wood.

In response to Applicant's argument that commercially all fuel tanks are bonded together using welding and not adhesives, although this may be true it does not change the fact that it is taught in Wood that adhesives are used to bond sections of fuel

Art Unit: 1772

tanks together, regardless of whether that embodiment taught by Wood has been commercially utilized.

In response to Applicant's argument that there is no teaching that the adhesive of Zharov is equivalent to the adhesives disclosed in Wood and therefore being useful for bonding fuel tanks together, Wood does not require that epoxy or polyurethane be used as the adhesive. Wood teaches these two adhesives as examples of thermosetting adhesives that may be used, but teaches that both thermoplastic and thermosetting adhesives may be used. Wood teaches only broad examples of useful adhesives and the only properties required for the adhesive of Wood is that it forms a strong bond between the sections of the fuel tank. Zharov teaches that strong shear strengths greater than 400 psi are formed between the adhesive of Zharov and polyethylene and other low energy surfaces as shown in the examples. Therefore, it would have been obvious to one having ordinary skill in the art that the adhesive of Zharov would meet the properties required of Wood such as shear strength since Zharov teaches that the adhesive forms strong bonds with low energy surfaces.

In response to Applicant's argument that neither Wood nor Zharov teach the claimed lap shear strength, load, or permeation rate, Zharov teaches in the examples that the shear strength

Art Unit: 1772

with polyethylene is greater than 400 psi. Furthermore, the lap shear strength, load and permeation rate are latent properties of the adhesive taught in Zharov. Zharov teaches the same adhesive composition as the claimed invention and the same composition must have the same properties. Mere recognition of latent properties of a known article does not render that article unobvious.

In response to Applicant's argument that because Wood suggests using adhesives that require treatment of low energy surfaces prior to use, it teaches away from the claimed invention, Wood does not teach that adhesives not requiring treatment of the surface should not be used, but merely teaches some that do. While Zharov specifically teaches that the adhesive of Zharov is substituted for traditional adhesives that require treatment because it eliminates that costly step.

13. Applicant's arguments regarding the 35 U.S.C. 103 rejections of claims 1-15, 29, and 39 over Straetz in view of Zharov have been fully considered but they are not persuasive.

Applicant's arguments regarding Straetz in view of Zharov are the same as the arguments regarding Wood in view of Zharov and therefore are addressed above with regard to Wood and Zharov.

14. Applicant's arguments regarding the 35 U.S.C. 103 rejections of claims 21 and 23-26 over Wood or Straetz have been considered but they are moot since the rejections have been withdrawn.

15. Applicant's arguments regarding the 35 U.S.C. 103 rejections of claims 27, 28, and 30 over Wood or Straetz in view of Yang or Chan have been considered but they are moot since the rejections have been withdrawn.

#### **Conclusion**

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will

Art Unit: 1772

expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Bruenjes whose telephone number is 571-272-1489. The examiner can normally be reached on Monday thru Friday from 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1772

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher P Bruenjes  
Examiner  
Art Unit 1772

CPB *CPB*

November 29, 2005

*[Signature]*  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER

*1772*

*11/29/05*